

WHAT IS CLAIMED IS:

1. A method of treating autoimmune disease in a patient comprising:
administering to the patient an effective amount of a plurality of at least two antibodies
5 selected from the group consisting of: antibodies to alpha interferon, antibodies to alpha interferon receptor, antibodies to gamma interferon, antibodies to gamma interferon receptor, antibodies to tumor necrosis factor, antibodies to tumor necrosis factor receptor, antibodies to HLA class II antigen, and antibodies to HLA class II antigen receptor.
- 10 2. The method of treating autoimmune disease according to claim 1, further comprising
removing antigens from the patient by the additional steps comprising:
drawing fluid from said patient;
passing said fluid through immunosorbent comprising a combination of antibodies,
comprising at least two antibodies selected from the group consisting of: antibodies to alpha
15 interferon, antibodies to alpha interferon receptor, antibodies to gamma interferon, antibodies to
gamma interferon receptor, antibodies to tumor necrosis factor and antibodies to tumor necrosis
factor receptor, antibodies to HLA class II antigen, and antibodies to HLA class II antigen receptor;
and
returning said fluid to said patient.
- 20 3. A method of treating autoimmune disease according to claim 1, wherein the plurality of
antibodies comprises (a) at least one antibody selected from the group consisting of antibodies to
alpha interferon and antibodies to alpha interferon receptor, and (b) at least one antibody selected
from the group consisting of antibodies to gamma interferon and antibodies to gamma interferon
25 receptor.
4. The method of treating autoimmune disease according to claim 2, wherein the
immunosorbent comprises (a) at least one antibody selected from the group consisting of antibodies to
alpha interferon and antibodies to alpha interferon receptor, and (b) at least one antibody selected

from the group consisting of antibodies to gamma interferon and antibodies to gamma interferon receptor.

5. The method of treating autoimmune disease according to claim 3, wherein the plurality of antibodies further comprises at least one antibody to tumor necrosis factor or to tumor necrosis factor receptor.

6. The method of treating autoimmune disease according to claim 4, wherein the immunosorbent further comprises at least one antibody to tumor necrosis factor or to tumor necrosis factor receptor.

7. The method of treating autoimmune disease according to claim 5, wherein the plurality of antibodies further comprises at least one antibody to HLA class II antigen or to its receptor.

15 8. The method of treating autoimmune disease according to claim 6, wherein the immunosorbent further comprises at least one antibody to an HLA class II antigen or to its receptor.

9. The method of treating autoimmune disease according to claim 1, wherein said antibody or antibodies are selected from the group consisting of monoclonal antibodies, polyclonal antibodies, 20 and combinations thereof, including biologically active fragments, functional equivalents, derivatives, or allelic or species variants thereof.

10. The method of treating autoimmune disease according to claim 2, wherein said antibody or antibodies in the additional steps are selected from the group consisting of monoclonal antibodies, 25 polyclonal antibodies, and combinations thereof, including biologically active fragments, functional equivalents, derivatives, or allelic or species variants thereof.

11. The method of treating autoimmune disease according to claim 1, wherein an effective amount of beta interferon is also administered.

12. The method of treating autoimmune disease in a patient according to claim 11, wherein said autoimmune disease is multiple sclerosis.

13. The method of treating autoimmune disease according to claim 2, wherein an effective amount of beta interferon is also administered.

14. The method of treating autoimmune disease in a patient according to claim 13, wherein said autoimmune disease is multiple sclerosis.

10 15. The method of treating autoimmune disease according to claim 1, wherein the plurality of antibodies further comprises antibody to interleukin 6 or to its receptor.

16. The method of treating autoimmune disease according to claim 2, wherein the immunosorbent further comprises antibody to interleukin 6 or to its receptor.

15 17. The method of treating autoimmune disease in a patient according to claim 15, wherein said autoimmune disease is systemic lupus erythematosus or insulin-dependent diabetes mellitus.

18. The method of treating autoimmune disease in a patient according to claim 16, wherein said 20 autoimmune disease is systemic lupus erythematosus or insulin-dependent diabetes mellitus.

19. The method of treating autoimmune disease according to claim 2, wherein the immunosorbent further comprises antibody to IgE or to its receptor.

25 20. The method of treating autoimmune disease in a patient comprising removing autoantibodies from the patient by the steps comprising:
drawing fluid from said patient;
passing said fluid through immunosorbent comprising at least one member of the group consisting of: target cells, CD4 cells and DNA, to remove, neutralize or inhibit autoantibodies in the 30 patient's fluid; and

returning said fluid to said patient.

21. The method of treating autoimmune disease according to claim 20, wherein the immunosorbent further comprises at least one member of the group consisting of: antibodies to alpha 5 interferon, antibodies to alpha interferon receptor, antibodies to gamma interferon, antibodies to gamma interferon receptor, antibodies to tumor necrosis factor, antibodies to tumor necrosis factor receptor, antibodies to HLA class II antigen, and antibodies to HLA class II antigen receptor.

22. The method of treating autoimmune disease according to claim 2, wherein the 10 immunosorbent further comprises a target cell or cells to remove, neutralize or inhibit autoantibodies to target cells in the patient's fluid.

23. The method of treating autoimmune disease according to claim 2, wherein the 15 immunosorbent further comprises DNA to remove, neutralize or inhibit autoantibodies to DNA in the patient's fluid.

24. The method of treating autoimmune disease according to claim 2, wherein the immunosorbent further comprises CD4 cells to remove, neutralize or inhibit autoantibodies to CD4 cells in the patient's fluid.

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25. The method of treating autoimmune disease in a patient according to claim 24, wherein said autoimmune disease is AIDS.

26. A method of treating autoimmune disease in a patient comprising administering to the patient 25 antibodies to gamma interferon or to gamma interferon receptor in an amount effective to neutralize or reduce fluid activity levels of gamma interferon.

27. A method of treating autoimmune disease in a patient comprising removing antigens from the patient by the steps comprising:

30 drawing fluid from said patient;

passing said fluid through immunosorbent comprising antibodies to gamma interferon or to gamma interferon receptor; and
returning said fluid to said patient.

5 28. A method of treating autoimmune disease in a patient comprising administering to the patient antibodies to HLA class II antigen or to HLA class II antigen receptor in an amount effective to neutralize or reduce fluid activity levels of HLA class II antigen.

10 29. A method of treating autoimmune disease in a patient comprising removing antigens from the patient by the steps comprising:
drawing fluid from said patient;
passing said fluid through immunosorbent comprising antibodies to HLA class II antigen or to HLA class II antigen receptor; and
returning said fluid to said patient.

15 30. A pharmaceutical composition comprising in combination an effective amount to treat a patient with autoimmune disease of a plurality of two or more components selected from the group consisting of: antibodies to alpha interferon, antibodies to alpha interferon receptor, antibodies to gamma interferon, antibodies to gamma interferon receptor, antibodies to tumor necrosis factor, antibodies to tumor necrosis factor receptor, antibodies to HLA class II antigen, and antibodies to HLA class II antigen receptor, and a pharmaceutically acceptable carrier therefor.

25 31. A kit comprising an immunosorbent comprising an effective amount to extracorporeally remove, reduce or neutralize one or more autoimmunogens from the fluid of a patient with autoimmune disease of at least one member of the group consisting of: antibodies to alpha interferon, antibodies to alpha interferon receptor, antibodies to gamma interferon, antibodies to gamma interferon receptor, antibodies to tumor necrosis factor, antibodies to tumor necrosis factor receptor, antibodies to HLA class II antigen, antibodies to HLA class II antigen receptor, and antibodies to IgE and to its receptor.

32. A kit comprising an immunosorbent comprising an effective amount to extracorporeally remove, reduce or neutralize one or more autoantibodies from the fluid of a patient with autoimmune disease of at least one member of the group consisting of: target cells, CD4 cells, and DNA.

